

## A. TRANSITIONING N1-2 TO DIAGNOSTIC/STANDBY/OFF FROM PRIMARY & N1-1 TO PRIMARY FROM SECONDARY/STANDBY

1. VERIFY MDM STATES AND MDM IDs

PCS2

Node 1: C&DH: MDM N1-2

PRIMARY NCS MDM Node 1

√STATE - Primary

√MDM ID - N1-2

PCS2

Node 1: C&DH: MDM N1-1

SECONDARY NCS MDM Node 1

√STATE - Secondary/Standby

√MDM ID - N1-1

### NOTE

If states are not correct, do not execute this procedure.

√**MCC**

2. DISABLE NCS AUTO RETRY

PCS2

Node 1: C&DH: MDM N1-1

SECONDARY NCS MDM Node 1

'Software Control'

sel MDM Utilities

SECONDARY NCS MDM Node 1

√Secondary\_NCS\_Auto\_Retry\_Inh - X (Inhibited)

If blank (enabled)

sel Commands

**cmd Secondary\_NCS\_Inh\_NCS\_Retry Execute**

√Secondary\_NCS\_Auto\_Retry\_Inh - X (Inhibited)

3. COMMAND N1-2 MDM TO DIAG (N1-1 SHOULD GO TO PRIM)

### NOTE

When MDM N1-2 is commanded to Diagnostic, the following heaters are commanded to their Default State which is Off.

1. PMA 1 Shell Heaters 1B, 2B, 3B, and 5B
2. Node 1 Shell Heaters 1B --- 9B
3. MDM N1-2 Operational Heater
4. MDM N1-1 Survival Heater

PCS2

Node 1: C&DH: MDM N1-2

PRIMARY NCS MDM Node 1

'Software Control'

sel MDM FDIR

√Prim\_NCS\_Cmd\_Xsitn\_to\_Dgnstc\_Inh - blank (Enable)

If X (Inhibited)

'MDM Major State'

sel Commands

**cmd** N1-2\_MDM\_Cmd\_Xsitn\_Dgnstc\_State\_Arm **Execute**

'Software Control'

sel MDM FDIR

√Prim\_NCS\_Cmd\_Xsitn\_to\_Dgnstc\_Inh - blank (Enable)

**NOTE**

1. Sending the following command will cause the loss of PCS2, Early COMM, and OIU telemetry until OIU reconfiguration and PCS1 reconnection are done.
2. Possible PDI DECOM fail message.

'MDM Major State:'

sel Commands

**cmd** N1-2\_MDM\_Xsitn\_Dgnstc\_State **Execute**

PCS2

Node 1: C&DH: MDM N1-2

PRIMARY NCS MDM Node 1

√Frame Count - static (Loss of PCS2 telemetry)

Wait 1 minute for N1-1 to go to Primary. N1-1 should go to Primary State after 50 seconds.

4. RECOVER TELEMETRY ON PCS1 AND VERIFY N1-1 IS PRIMARY

PCS1

After boot up (as required), taskbar appears at bottom of display

sel Arrow directly above 'PCS' logo

sel Start/Restart PCS CDS

sel Icon to open PCS CDS Main Control Panel Window

√Status Box is green and 'Connected' is displayed in the PCS CDS Main Control Panel Window.

NOTE

PCS1 connection to MDM is indicated by green in the Status Box and/or 'Connected' message displayed in the PCS1 CDS Main Control.

```
*****
*   If Status Box is not green, select 'Connect to MDM' icon   *
*   to reconnect.                                             *
*   If still no joy, close all displays and all iconified items and *
*   repeat this step.                                         *
*   *
*   ✓MCC if Status Box is still not green.                   *
*****
```

NOTE

C&W tone and TBD C&W message will be generated as N1-1 becomes primary and detects N1-2 fails.

PCS1

Node 1: C&DH: MDM N1-1  
PRIMARY NCS MDM Node 1

✓Frame Count - incrementing

'MDM Major State:'

✓MDM ID - N1-1

✓MDM State - Primary

PCS2

1. Verify MDM Heater and Shell Heater Configuration

Node 1: C&DH: MDM N1-1  
SECONDARY NCS MDM Node 1  
 'RPCM N1RS1 A'

sel RPC 5  
 sel Commands

✓Position - CI

'N1-1 Operational'

✓MDM N1-1 Op Htr Availbty - Ena Ops  
 ✓MDM N1-1 Op Htr Health Stat - Operational

'N1-2 Survival'

✓MDM N1-2 Surv Htr Availbty - Ena Ops  
 ✓MDM N1-2 Surv Htr Health Stat - Operational

✓MCC for PMA 1 and Node 1 Shell Heater configuration

5. TELEMETRY RECOVERY ON EARLY COMM (GROUND ONLY)

NOTE

Early COMM should reconnect to N1-1 MDM on the other Orb bus automatically in about 10 seconds after N1-1 MDM becomes Primary.

Node 1: C&DH: MDM N1-1

PRIMARY NCS MDM Node 1

√Frame Count - incrementing

'MDM Major State:'

√MDM ID - N1-1

√MDM State - Primary

```
* ***** *
* If Frame Count is Static after 20 seconds from the moment *
* N1-1 becomes Primary (No Early COMM telemetry received) *
* *
* √MCC *
* ***** *
```

6. TELEMETRY RECOVERY ON OIU

NOTE

Possible PDI DECOM fail message.

CRT

SM 212 OIU

BUS 4 BC - ITEM 15 EXEC

BUS 3 RT - ITEM 10 EXEC

Change OIU N1 Physical Device to N1-1 - ITEM 18 +4 EXEC

CRT

Reload OIU FORMAT 2 - ITEM 1 +2 EXEC

CRT

SM 210 NODE

√PHY ID PRI MDM - N1-1

√STATE - PRI

√FAIL - blank

√FRM CTR - incrementing

7. VERIFY N1-2 IS IN DIAGNOSTIC

PCS1

Node 1: C&DH: MDM N1-2

SECONDARY NCS MDM Node 1

√Frame Count - static

PCS1

Node 1: C&DH: MDM N1-1

PRIMARY NCS MDM Node 1

'Software Control'

sel Transmit Mode Code

Primary\_NCS\_Transmit\_Mode\_Code

sel Primary NCS Xmt Mode Code Commands

**cmd** Xmt\_Stat\_Word\_Tmplt

enter Bus ID - 2

enter RT Address - 5 **Execute**

√Subsystem Flag Set - X (set)

If Subsystem Flag Bit is set, N1-2 MDM is in Diagnostic State and is ready to accept diagnostic commands.

If transitioning N1-2 to Diagnostic >>

If transitioning N1-2 to Standby, go to step 8.

If powering off N1-2, go to step 9.

8. IF TRANSITIONING N1-2 MDM TO STANDBY STATE

PCS1

Node 1: C&DH: MDM N1-1

PRIMARY NCS MDM Node1

'Software Control'

sel MDM Utilities

sel Commands

NOTE

1. Startup process will execute from the UAS currently loaded in DRAM.

2. No POST is performed.

**cmd** N1\_2\_MDM\_Re\_Init\_MDM\_DRAM **Execute**

Wait 60 seconds for MDM to reinitialize.

PCS1

Node 1: C&DH: MDM N1-2

SECONDARY NCS MDM Node 1

√Frame Count - incrementing

'MDM Major State:'

√STATE - Standby

√MDM ID - N1-2

```

* ***** *
* If state is not Standby *
* *
* √MCC *
* ***** *

```

PCS1      9. IF POWERING OFF N1-2 MDM  
             Node 1: C&DH: MDM N1-2  
             SECONDARY NCS MDM Node 1

            'RPCM \_N1RS2\_C'

            sel RPC 13 (Nod1\_2\_MDM)

RPCM \_N1RS2\_C\_RPC\_13 Detail

            sel    Commands  
             **cmd** Open **Execute**  
             √Position - Op